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# U.S. DEPARTMENT OF AGRICULTURE



## FARMERS' BULLETIN

639



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### ERADICATION OF THE CATTLE TICK NECESSARY FOR PROFITABLE DAIRYING.

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The cattle tick is a great hindrance to the development of the cattle-raising industry in the South. The sight of ticks on cattle is so common that many farmers do not regard them as harmful, and it is well known that a few ticks may remain on cattle quite a long time without doing any noticeable damage. The ticks, nevertheless, are the carriers of Texas fever, and even in so-called immune cattle they irritate the skin and draw blood that would otherwise produce milk or flesh. The actual amount of harm which ticks do to these so-called immune cattle has been a matter of conjecture. The need of some definite knowledge on this subject led the Department of Agriculture to conduct some experiments on the effect of the tick on milk production and body weights of dairy cattle.

The work was done by the Bureau of Animal Industry in the summers of 1912 and 1913 in cooperation with Mr. E. J. Thornhill, at Summerville, S. C., and Mr. E. C. Beuchler, vice-president and manager of the farm of the Anthony Farms Co., Anthony, Fla.

#### RESULTS OF EXPERIMENTS.

Forty cows were divided into two lots of 20, each of which was producing practically the same amount of milk and was given the same feed and care for an average of 152 days during the season favorable to the development of ticks. One of the lots in each experiment was allowed to become infested with ticks, while another was kept free from them in one case by spraying and in the other by dipping. The main results of the experiments were as follows:

1. Cows carrying ticks did not hold up so well in milk flow as the cows kept free from ticks and did not increase their flow of milk when the feed was increased, as did the tick-free cows.

2. At the close of the experiment the cows lightly infested with ticks were producing 18.6 per cent less milk than the cows kept free from ticks.

3. At the end of the experiments the cows heavily infested with ticks were producing 42.4 per cent less milk than the tick-free cows.

4. During the experimental period of one of the tests, which included 20 cows, the heavily infested cows lost an average of 9.3 pounds in weight, while the tick-free cows gained an average of 44.2 pounds, although both lots were fed alike.

5. Cows which had previously been infested with ticks and were supposed to be immune suffered from tick fever and one cow actually died from the effects of the tick.<sup>1</sup>

#### EFFECT OF SPRAYING AND DIPPING.

Some of the cows in the experiment were kept free from ticks by spraying with an arsenical solution (tick dip B) and the others by dipping in a similar solution in a dipping vat. The spraying caused

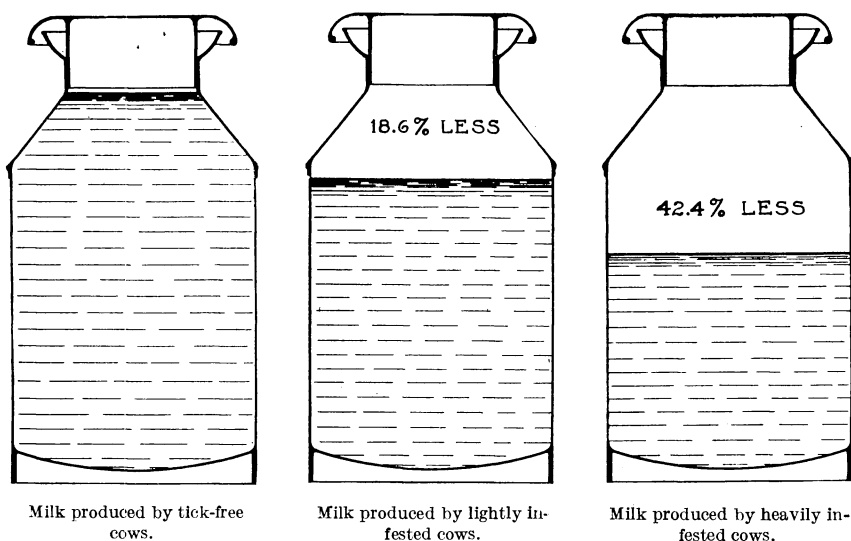


FIG. 1.—Relative quantities of milk produced by tick-free, lightly infested, and heavily infested cows.

a temporary falling off of 6.1 per cent in milk, but in from three to five days the bad effects of the spraying disappeared. Likewise, the shock of dipping caused the cows to lose an average of 10.6 per cent in milk for two days, but after several dippings they seemed to become accustomed to going through the vat and temporarily lost only 1 per cent in milk after the last few dippings. It should be remembered that while the dipping and spraying caused these temporary losses, they are very small, and it is by this means that the ticks are destroyed and a saving in milk effected in the long run.

While these experiments were conducted with comparatively small numbers of animals, the work was done with native cows on farms

<sup>1</sup> For a detailed account of these experiments, see Department Bulletin 147.

in the tick belt and are true indications of the great losses that occur annually with the thousands of cows exposed to the ravages of the cattle tick.

#### THE COST OF FEEDING TICKS.

If a dairyman with 20 cows, producing 8 quarts of milk each per day, should let them become lightly infested with ticks and the milk production were decreased, as in the case of the lightly infested cows in the experiments made by the Department of Agriculture, the loss would be  $1\frac{1}{2}$  quarts a day for each cow. At 20 cents a gallon, or 5 cents a quart, this would amount to  $7\frac{1}{2}$  cents a cow, or \$1.50 for the entire herd each day. If the tick infestation were heavy and the reduction in milk were as great as in the heavily infested cows in the

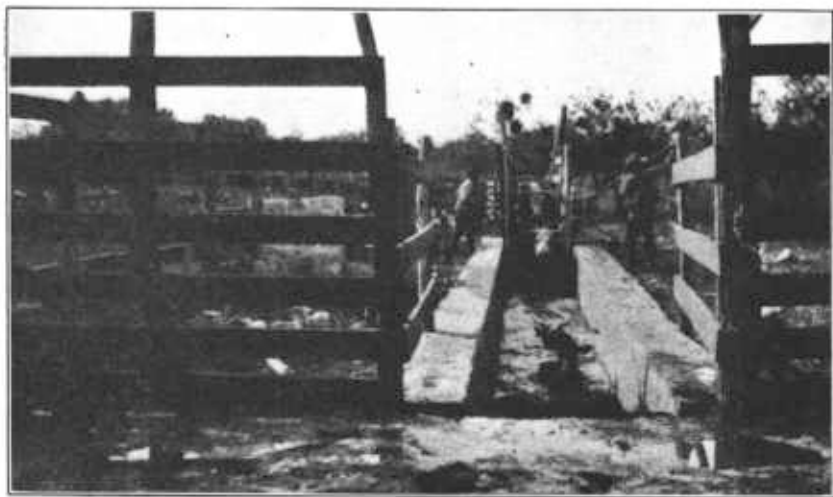


FIG. 2.—A concrete vat for dipping cattle. This vat was made according to specifications furnished by the Bureau of Animal Industry, United States Department of Agriculture.

experiment, the loss would be 3.4 quarts (worth 17 cents) a day for each cow; this would amount to \$3.40 a day for the entire herd.

The experience of a dairyman in the heart of the tick-infested territory also strikingly illustrates how much it costs dairymen to have ticks on their cattle. Late in the season, when his cows were covered with ticks, the cattle were dipped and the ticks killed. One week after dipping, the 42 cows in his herd gave 10 gallons of milk more than before dipping. This was an increase of 16.6 per cent, and as the milk was bringing 35 cents a gallon, the extra 10 gallons were worth \$3.50; hence, by getting rid of the ticks, the same cows on the same feed produced enough milk to net the dairyman \$3.50 a day more than before they were dipped. The money which this dairyman spent in dipping his cows was a good investment.

**THE CATTLE TICK MUST BE ERADICATED.**

If the farmers in one county will work together, the ticks in the entire county can be eradicated in one year. The dipping vat makes the work easy, effective, and practical. Methods of exterminating the tick are described in Farmers' Bulletin 498, which can be had on application to the United States Department of Agriculture, Washington, D. C.

It costs more to feed the ticks than it does to kill them.

Which do you prefer to do ?

